Townville Infants' and Nursery School

Maths Progression Document: Geometry: Properties of Shapes, Position and Direction

The progression maps are structured using the topic headings as they appear in the National Curriculum. Each 'topic' has been divided into sub categories to illustrate progression in key areas.

Nursery	Reception	Year 1	Year 2
Identifying shapes and their properties			
Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'	begin to recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	recognise and name common 2-D and 3-D shapes, including: * 2-D shapes [e.g. rectangles (including squares), circles and triangles] * 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].	identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
Comparing and Classifying			
Make comparisons between objects relating to size, length, weight and capacity (also in measurement)	Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.		compare and sort common 2-D and 3-D shapes and everyday objects
Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc			
Position, Direction and Movement			
Understand position through words alone – for example, "The bag is under the table," – with no pointing. Describe a familiar route. Discuss routes and locations, using words like 'in front of' and 'behind'.	Select, rotate and manipulate shapes to develop spatial reasoning skills.	describe position, direction and movement, including half, quarter and three-quarter turns.	use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
Pattern			
Talk about and identify the patterns around them.	Continue, copy and create repeating patterns		order and arrange combinations of

For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc.	*(including AB, ABB and ABBC)*		*mathematical objects in patterns and sequences*
Extend and create ABAB patterns – stick, leaf, stick, leaf.			
Notice and correct an error in a repeating pattern			
Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'			

All programmes of study statements are included and some appear twice. This is indicated in the text. This occurs where:

- *The statement has central relevance to more than one sub category within a topic;*
- *The statement has central relevance to more than one mathematics topic. This is done to reflect the aims of the curriculum that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems (Mathematics programmes of study: key stages 1 and 2 page 3). However, the connections made are not intended to be exhaustive and teachers will seek to support pupils in making other connections.*